

SEQUENCE LISTING

<110> Chiron Corporation

<120> RANDOM TRANSPOSON INSERTION IN STAPHYLOCOCCUS AUREUS AND USE THEREOF TO IDENTIFY ESSENTIAL GENES

<130> 002441.00063

<140> PCT/US 03/25879

<141> 2003-08-20

<150> US 60/404,406

<151> 2002-08-20

<160> 13

<170> PatentIn version 3.1

<210> 1

<211> 31

<212> DNA

<213> artificial sequence

<220>

<223> primer Cm194-HindF

<400> 1

tatataagct tgttacagta atattgactt t

31

<210> 2

<211> 31

<212> DNA

<213> artificial sequence

<220>

<223> primer Cm194-KpnR

<400> 2

taacgggtac cgttagtgac attagaaaac c

31

<210> 3

<211> 30

<212> DNA

<213> artificial sequence

<220>

<223> primer Erm917-HindF

<400> 3

aaataagctt tagaagcaaa cttaagagt

30

<210> 4

<211> 30

<212> DNA

<213> artificial sequence

<220>

<223> primer Erm917-KpnR

<400> 4

cggtcgttat ggtaccattc aaatttatcc 30

<210> 5
<211> 20
<212> DNA
<213> artificial sequence

<220>
<223> primer TNErm-1R

<400> 5
ctgtttcaaa acagtagatg 20

<210> 6
<211> 19
<212> DNA
<213> artificial sequence

<220>
<223> primer TNCm-1R2

<400> 6
gataggccta atgactggc 19

<210> 7
<211> 29
<212> DNA
<213> artificial sequence

<220>
<223> primer arb-8

<220>
<221> misc_feature
<222> (1)..(29)
<223> n = g, a, t, or c

<400> 7
ggccacgcgt cgactagtagc nnnngatat 29

<210> 8
<211> 22
<212> DNA
<213> artificial sequence

<220>
<223> primer TNErm-2R

<400> 8
caacatgacg aatccctcct tc 22

<210> 9
<211> 24
<212> DNA
<213> artificial sequence

<220>
<223> primer TNCm-2R2

<400> 9
gtcggttttc taatgtcact aacg

24

<210> 10
<211> 20
<212> DNA
<213> artificial sequence

<220>
<223> primer arb-tail

<400> 10
ggccacgcgt cgactagtac

20

<210> 11
<211> 2470
<212> DNA
<213> artificial sequence

<220>
<223> plasmid pMOD

<400> 11
tcgcgcggtt cggatgatgac ggtgaaaacc tctgacacat gcagctcccg gagacgggtca 60
cagcttgtct gtaagcggat gccgggagca gacaagcccg tcagggcgcg tcagcgggtg 120
ttggcgggtg tcggggctgg cttaactatg cggcatcaga gcagattgta ctgagagtgc 180
accatatgcg gtgtgaaata ccgcacagat gcgtaaggag aaaataccgc atcaggcgcc 240
attcgccatt caggctgcgc aactgttggg aagggcgatc ggtgcgggcc tcttcgctat 300
tacgccagct gtctcttata cacatctcaa ccatcatcga tgaattcgag ctcggtaccc 360
ggggatcctc tagagtcgac ctgcaggcat gcaagcttca gggttgagat gtgtataaga 420
gacagctgca ttaatgaatc ggccaacgcg cggggagagg cggtttgctt attgggcgct 480
cttccgcttc ctcgctcact gactcgtgc gctcggctcgt tcggctgcgg cgagcgggtat 540
cagctcactc aaaggcggtg atacggttat ccacagaatc aggggataac gcaggaaaga 600
acatgtgagc aaaaggccag caaaaggcca ggaaccgtaa aaaggccgcg ttgctggcgt 660
ttttccatag gctccgcccc cctgacgagc atcacaaaaa tcgacgctca agtcagaggt 720
ggcgaaaccg gacaggacta taaagatacc aggcgtttcc ccctggaagc tccctcgtgc 780
gctctcctgt tccgaccctg ccgcttaccg gatacctgtc cgcctttctc ccttcgggaa 840
gcgtggcgct ttctcatagc tcacgctgta ggtatctcag ttcggtgtag gtcgttcgct 900
ccaagctggg ctgtgtgcac gaaccccccg ttcagcccga ccgctgcgcc ttatccggta 960
actatcgtct tgagtccaac ccggtgaagc acgacttatc gccactggca gcagccactg 1020
gtaacaggat tagcagagcg aggtatgtag gcggtgctac agagttcttg aagtgggtggc 1080
ctaactacgg ctacactaga aggacagtat ttggtatctg cgctctgctg aagccagtta 1140

ccttcgga	aaagattggt	agctcttgat	ccggcaaaca	aaccaccgct	ggtagcgg	1200
gtttttt	ttgcaagcag	cagattacgc	gcagaaaaa	aggatctcaa	gaagatcctt	1260
tgatctttt	tacgggggtct	gacgctcagt	ggaacgaaaa	ctcacgttaa	gggattttg	1320
tcatgagatt	atcaaaaagg	atcttcacct	agatcctttt	aaattaaaaa	tgaagtttta	1380
aatcaatcta	aagtatatat	gagtaaactt	ggtctgacag	ttaccaatgc	ttaatcagtg	1440
aggcacctat	ctcagcgatc	tgtctatttc	gttcatccat	agttgcctga	ctccccgtcg	1500
tgtagataac	tacgatacgg	gagggcttac	catctggccc	cagtgtgca	atgataccgc	1560
gagaccacg	ctcaccggct	ccagatttat	cagcaataaa	ccagccagcc	ggaagggccg	1620
agcgcagaag	tggtcctgca	actttatccg	cctccatcca	gtctattaat	tggtgccggg	1680
aagctagagt	aagtagttcg	ccagttaata	gtttgcgcaa	cgttgttgcc	attgctacag	1740
gcacgtggg	gtcacgctcg	tcgtttggta	tggcttcatt	cagctccggt	tcccaacgat	1800
caaggcgagt	tacatgatcc	cccatgttgt	gcaaaaaagc	ggtagctcc	ttcggtcctc	1860
cgatcgttgt	cagaagtaag	ttggccgcag	tggtatcact	catgggtatg	gcagcactgc	1920
ataattctct	tactgtcatg	ccatccgtaa	gatgcttttc	tgtgactggg	gagtactcaa	1980
ccaagtcatt	ctgagaatag	tgtatgcggc	gaccgagttg	ctcttgccc	gcgtcaatac	2040
gggataatac	cgcgccacat	agcagaactt	taaaagtgct	catcattgga	aaacgttctt	2100
cggggcgaaa	actctcaagg	atcttaccgc	tggtgagatc	cagttcgatg	taaccctctc	2160
gtgcacccaa	ctgatcttca	gcacctttta	ctttcaccag	cgtttctggg	tgagcaaaaa	2220
caggaaggca	aaatgccgca	aaaaagggaa	taagggcgac	acggaaatgt	tgaatactca	2280
tactcttcct	ttttcaatat	tattgaagca	tttatcaggg	ttattgtctc	atgagcggat	2340
acatatttga	atgtatttag	aaaaataaac	aaataggggt	tccgcgcaca	tttccccgaa	2400
aagtgccacc	tgacgtctaa	gaaaccatta	ttatcatgac	attaacctat	aaaaataggc	2460
gtatcacgag						2470

<210> 12
 <211> 3685
 <212> DNA
 <213> artificial

<220>
 <223> plasmid pMOD (Erm1)

<400>	12			
tcgcgcgtt	cggtgatgac	ggtgaaaacc tctgacacat gcagctccc	gagacgg	60
cagcttgct	gtaagcggat	gccgggagca gacaagccc	tcagggcg	120
tcagcgggtg	tcggggctgg	cttaactatg cggcatcaga	gcagattgta	180
ctgagagtg	accatattgcg	gtgtgaaata ccgcacagat	gcgtaaggag	240
aaaataccgc	atcagggcgc			

attcgccatt	caggctgcgc	aactgttggg	aagggcgatc	ggtgcgggcc	tcttcgctat	300
tacgccagct	gtctcttata	cacatctcaa	ccatcatcga	tgaattcgag	ctcggtagcg	360
taccattcaa	atttatcctt	attgtacaaa	ataacagcga	aattttttaa	tctattcctt	420
atcgatacaa	attccccgta	ggcgctaggg	acctctttag	ctccttggaa	gctgtcagta	480
gtatacctaa	taattttatct	acattccctt	tagtaacgtg	taactttcca	aattttacaaa	540
agcgactcat	agaattatct	cctccccgta	aataatagat	aactattaaa	aatagacaat	600
acttgctcat	aagtaacggg	acttaaattg	tttactttgg	cgtgtttcat	tgcttgtgaa	660
actgattttt	agtaaacagt	tgacgatatt	ctcgattgac	ccattttgaa	acaaagtacg	720
tatatagctt	ccaatattta	tctggaacat	ctgtggtatg	gcgggtaagt	tttattaaga	780
cactgtttac	ttttggttta	ggatgaaagc	attccgctgg	cagcttaagc	aattgctgaa	840
tcgagacttg	agtgtgcaag	agcaacccta	gtgttcggtg	aatatccaag	gtacgcttgt	900
agaatccttc	ttcaacaatc	agatagatgt	cagacgcgatg	gctttcaaaa	accacttttt	960
taataatttg	tgtgcttaaa	tggttaaggaa	tattcccaac	aattttatac	ctctgtttgt	1020
tagggaattg	aaactgtaga	atatcttggg	gaattaaagt	gacacgaatg	ttcagtttta	1080
atctttctga	cgataagttg	aatagatgac	tgtctaattc	aatagacggt	acctgtttac	1140
ttatcttagc	cagtttcgtc	gttaaattgcc	ctttacctgt	tccaatttcg	taaacgggat	1200
cggtttcttt	taaattcaat	tgttttatta	tttggttgag	taccttttca	ttcgttaaaa	1260
agttttgaga	atattttata	tttttgttca	tgtaatcact	cctgaagtga	tacatctata	1320
aataaataca	gaagttaaac	gatttgtttg	taattttagt	tatctgttta	aaaagtcata	1380
agattagtca	ctggtaggaa	ttaatctaaa	cgtatttatc	tgcgtaatca	ctgtttttag	1440
tctgtttcaa	aacagtagat	gttttatcta	cattacgcac	ttggaatacc	aacatgacga	1500
atccctcctt	cttaattaca	aatttttagc	atctaattta	acttcaattc	ctattataca	1560
aaattttaag	ataatgcact	atcaacacac	tcttaagttt	gcttctaaag	cttcagggtt	1620
gagatgtgta	taagagacag	ctgcattaat	gaatcgcca	acgcgcgggg	agaggcggtt	1680
tgcgatttgg	gcgctcttcc	gcttcctcgc	tcactgactc	gctgcgctcg	gtcgttcggc	1740
tgcggcgagc	ggtatcagct	cactcaaagg	cggtaatagc	gttatccaca	gaatcagggg	1800
ataacgcagg	aaagaacatg	tgagcaaaa	gccagcaaaa	ggccagggaac	cgtaaaaagg	1860
ccgcgttgct	ggcgtttttc	cataggctcc	gccccctga	cgagcatcac	aaaaatcgac	1920
gctcaagtca	gagggtggcg	aacccgacag	gactataaag	ataccaggcg	tttccccctg	1980
gaagctccct	cgtgcgctct	cctgttccga	ccctgccgct	taccggatac	ctgtccgcct	2040
ttctcccttc	gggaagcgtg	gcgctttctc	atagctcacg	ctgtaggtat	ctcagttcgg	2100
tgtaggtcgt	tcgctccaag	ctgggctgtg	tgacgaacc	ccccgttcag	cccgaccgct	2160

gcgcccttatc	cggtaaactat	cgtcttgagt	ccaacccggt	aagacacgac	ttatcgccac	2220
tggcagcagc	cactggtaac	aggattagca	gagcgaggta	tgtaggcggt	gctacagagt	2280
tcttgaagtg	gtggcctaac	tacggctaca	ctagaaggac	agtatttggt	atctgcgctc	2340
tgctgaagcc	agttaccttc	ggaaaaagag	ttggtagctc	ttgatccggc	aaacaaacca	2400
ccgctggtag	cggtggtttt	tttgtttgca	agcagcagat	tacgcgcaga	aaaaaaggat	2460
ctcaagaaga	tcctttgatc	ttttctacgg	ggtctgacgc	tcagtggaac	gaaaactcac	2520
gttaagggat	tttggatcatg	agattatcaa	aaaggatctt	cacctagatc	cttttaaatt	2580
aaaaatgaag	ttttaaatca	atctaaagta	tatatgagta	aacttggtct	gacagttacc	2640
aatgcttaat	cagtgaaggca	cctatctcag	cgatctgtct	atttcgttca	tccatagttg	2700
cctgactccc	cgctgtgtag	ataactacga	tacgggaggg	cttaccatct	ggccccagtg	2760
ctgcaatgat	accgcgagac	ccacgctcac	cggctccaga	tttatcagca	ataaaccagc	2820
cagccggaag	ggccgagcgc	agaagtgggtc	ctgcaacttt	atccgcctcc	atccagtcta	2880
ttaattgttg	ccgggaagct	agagtaagta	gttcgccagt	taatagtttg	cgcaacgttg	2940
ttgccattgc	tacaggcatc	gtggtgtcac	gctcgtcggt	tggtatggct	tcattcagct	3000
ccggttccca	acgatcaagg	cgagttacat	gatcccccat	gttgtgcaaa	aaagcggtta	3060
gctccttcgg	tcctccgatc	gttgtcagaa	gtaagttggc	cgcagtgtta	tcactcatgg	3120
ttatggcagc	actgcataat	tctcttactg	tcatgccatc	cgtaagatgc	ttttctgtga	3180
ctggtgagta	ctcaaccaag	tcattctgag	aatagtgtat	gcggcgaccg	agttgctctt	3240
gcccggcgtc	aatacgggat	aataccgcgc	cacatagcag	aactttaaaa	gtgctcatca	3300
ttgaaaaacg	ttcttcgggg	cgaaaactct	caaggatctt	accgctgttg	agatccagtt	3360
cgatgtaacc	cactcgtgca	cccaactgat	cttcagcatc	ttttactttc	accagcgttt	3420
ctgggtgagc	aaaaacagga	aggcaaaatg	ccgcaaaaaa	gggaataagg	gcgacacgga	3480
aatgttgaat	actcatactc	ttcctttttc	aatattattg	aagcatttat	cagggttatt	3540
gtctcatgag	cggatacata	tttgaatgta	tttagaaaaa	taaacaaata	ggggttccgc	3600
gcacatttcc	ccgaaaagtg	ccacctgacg	tctaagaaac	cattattatc	atgacattaa	3660
cctataaaaa	taggcgtatc	acgag				3685

<210> 13
 <211> 3245
 <212> DNA
 <213> artificial sequence

<220>
 <223> plasmid pMOD (Cm)

<400>	13	
tcgcgcgttt	cggtgatgac	ggtgaaaacc tctgacacat gcagctcccg gagacgggtca 60

cagcttgtct gtaagcggat gccgggagca gacaagcccg tcagggcgcg tcagcgggtg	120
ttggcgggtg tcggggctgg cttactatg cggcatcaga gcagattgta ctgagagtgc	180
accatatgcg gtgtgaaata ccgcacagat gcgtaaggag aaaataccgc atcaggcgcc	240
attcgccatt caggctgcmc aactgttggg aaggcgatc ggtgcgggcc tcttcgctat	300
tacgccagct gtctcttata cacatctcaa ccatcatcga tgaattcgag ctcggtaccg	360
ttagtacat tagaaaaccg actgtaaaaa gtacagtcgg cattatctca tattataaaa	420
gccagtcatt aggcctatct gacaattcct gaatagagtt cataaacaat cctgcatgat	480
aaccatcaca aacagaatga tgtacctgta aagatagcgg taaatatatt gaattacctt	540
tattaatgaa ttttcctgct gtaataatgg gtagaaggta attactatta ttattgatat	600
ttaagttaa cccagtaaag gaagtcctat gaataataga aagagaaaaa gcattttcag	660
gtataggtgt tttgggaaac aatttccccg aaccattata tttctctaca tcagaaagg	720
ataaatcata aaactctttg aagtcattct ttacaggagt ccaaatacca gagaatgttt	780
tagatacacc atcaaaaatt gtataaagtg gctctaactt atcccaataa cctaactctc	840
cgtcgctatt gtaaccagtt ctaaaagctg tttttgagtt tatcaccctt gtcactaaga	900
aaataaatgc agggtaaaat ttatatcctt cttgttttat gtttcggtat aaaacactaa	960
tatcaatttc tgtggttata ctaaaagtcg tttgttggtt caaataatga ttaaatactt	1020
cttttctctt ccaattgtct aaatcaattt tattaaagtt catttgatat gcctcctaaa	1080
tttttatcta aagtgaattt aggaggctta cttgtctgct ttcttcatta gaatcaatcc	1140
tttttataaa gtcaatatta ctgtaacaag cttcagggtt gagatgtgta taagagacag	1200
ctgcattaat gaatcgcca acgcgcgggg agaggcgggt tgcgtattgg gcgctcttcc	1260
gcttcctcgc tctactgactc gctgcgctcg gtcgttcggc tgcggcgagc ggtatcagct	1320
cactcaaagg cggtaatagc gttatccaca gaatcagggg ataacgcagg aaagaacatg	1380
tgagcaaaag gccagcaaaa ggccagggaac cgtaaaaagg ccgcgttgct ggcgtttttc	1440
cataggctcc gccccctga cgagcatcac aaaaatcgac gctcaagtca gaggtggcga	1500
aaccgcagag gactataaag ataccaggcg tttccccctg gaagctccct cgtgcgctct	1560
cctgttccga ccctgccgct taccggatac ctgtccgcct ttctcccttc ggggaagcgtg	1620
gcgctttctc atagctcacg ctgtaggtat ctcagttcgg ttaggtcgt tcgctccaag	1680
ctgggctgtg tgcacgaacc ccccgttcag cccgaccgct gcgccttatc cggtaaactat	1740
cgtcttgagt ccaaccgggt aagacacgac ttatcgccac tggcagcagc cactggtaac	1800
aggattagca gagcgaggta tgtaggcgggt gctacagagt tcttgaagtg gtggcctaac	1860
tacggctaca ctagaaggac agtatttgggt atctgcgctc tgctgaagcc agttaccttc	1920
ggaaaaagag ttggtagctc ttgatccggc aaacaaacca ccgctggtag cgggtggttt	1980

tttgtttgca agcagcagat tacgcgcaga aaaaaaggat ctcaagaaga tcctttgatc	2040
ttttctacgg ggtctgacgc tcagtggaac gaaaactcac gttaagggat tttggtcacg	2100
agattatcaa aaaggatctt cacctagatc cttttaaatt aaaaatgaag ttttaaataca	2160
atctaaagta tatatgagta aacttggtct gacagttacc aatgcttaat cagtgaggca	2220
cctatctcag cgatctgtct atttcgttca tccatagttg cctgactccc cgtcgtgtag	2280
ataactacga tacgggaggg cttaccatct ggccccagtg ctgcaatgat accgcgagac	2340
ccacgctcac cggctccaga tttatcagca ataaaccagc cagccggaag ggccgagcgc	2400
agaagtggtc ctgcaacttt atccgcctcc atccagtcta ttaattgttg ccgggaagct	2460
agagtaagta gttcgccagt taatagtttg cgcaacgttg ttgccattgc tacaggcatc	2520
gtggtgtcac gctcgtcggt tggtatggct tcattcagct ccggttccca acgatcaagg	2580
cgagttacat gatccccat gttgtgcaaa aaagcggtta gtccttcgg tcctccgatc	2640
gttgtcagaa gtaagttggc cgcagtgta tcactcatgg ttatggcagc actgcataat	2700
tctcttactg tcatgccatc cgtaagatgc ttttctgtga ctggtgagta ctcaaccaag	2760
tcattctgag aatagtgtat gcggcgaccg agttgctctt gcccggcgtc aatacgggat	2820
aataccgcgc cacatagcag aactttaaaa gtgctcatca ttggaaaacg ttcttcgggg	2880
cgaaaactct caaggatctt accgctgttg agatccagtt cgatgtaacc cactcgtgca	2940
cccaactgat cttcagcatc ttttactttc accagcgttt ctgggtgagc aaaaacagga	3000
aggcaaaatg ccgcaaaaaa gggaataagg gcgacacgga aatgttgaat actcatactc	3060
ttcctttttc aatattattg aagcatttat cagggttatt gtctcatgag cggatacata	3120
tttgaatgta tttagaaaaa taaacaaata ggggttccgc gcacatttcc ccgaaaagtg	3180
ccacctgacg tctaagaaac cattattatc atgacattaa cctataaaaa taggcgtatc	3240
acgag	3245